AMENDMENT UNDER 37 C.F.R. § 1.111 Attorney Docket No.: Q95094

Application No.: 10/580,243

**AMENDMENTS TO THE CLAIMS** 

This listing of claims will replace all prior versions and listings of claims in the

application:

**LISTING OF CLAIMS:** 

1. - 5. (canceled).

6. (new): A process for converting a feedstock into gas oil fuel, including:

introducing material including the feedstock into a still pot in the form of liquor;

extracting a volume of material from the still pot, heating the extracted material under

pressure to a cracking temperature before injecting it back into the still pot beneath the surface

level of liquor in the still pot;

separating in a distillation column lighter molecular weight compounds from the cracked

material into volatile light ends and gas oil fuel; and

collecting the gas oil fuel.

7. (new): A process according to claim 6, wherein the volume of material is heated to a

cracking temperature by passing it via a first path through a heating unit and back to the still pot;

and wherein the process further includes: extracting a volume of material from the still pot,

passing it via a second path through said heating unit and back to the still pot; wherein the

material passed through said heating unit via said second path is passed through said heating unit

at a higher velocity than the material passed through the heating unit via said first path.

8. (new): A process according to claim 7, wherein the material passed through the

heating unit via the second path is extracted from the still pot at a higher level than the material

passed through the heating unit via the second path.

9. (new): A process according to claim 7, wherein the material passed through the

heating unit via the second path is also returned to the still pot beneath the surface level of the

liquor in the still pot.

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10. (new): A process according to claim 7, wherein the first path includes a pump between the still pot and the heating unit and a pressure reducing device between the heating unit and the still pot.

- 11. (new): A process according to claim 7, wherein the first path includes a pyrolysis vessel within the heating unit, and wherein the pressure of the material in the pyrolysis vessel is at least 0.1 bar.
  - 12. (new): A process according to claim 6, wherein the feedstock includes animal fats.
- 13. (new): A process according to claim 6, wherein the extracted material is thermally cracked under pressure in a pyrolysis vessel to a mixture of lighter molecular weight compounds, before said injection back into the still pot.
- 14. (new): A process according to claim 6, wherein the volume of liquid extracted from the still pot vessel is heated to above the cracking temperature while being kept at sufficiently high pressure to remain in a balanced gas/fluid state before said injection back into the still pot.
- 15. (new): A process according to claim 7, wherein the feedstock is fed from a storage tank to the heating unit prior to being fed into the still pot vessel.
  - 16. (new): An apparatus for converting a feedstock into gas oil fuel, including:
  - a still pot for receiving material including the feedstock in the form of liquor;
  - a heating unit;
- a first path for passing a volume of material from the still pot through said heating unit for heating to a cracking temperature and injecting it back into the still pot beneath the surface level of liquor in the still pot;
- a distillation column for separating lighter molecular weight compounds from the cracked material into volatile light ends and gas oil fuel; and
  - a condenser for collecting the gas oil fuel.
- 17. (new): An apparatus according to claim 16, further comprising a second path from the still pot through said heating unit and back to the still pot; and wherein the apparatus is

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configured to pass material from the still pot through said heating unit via said second path at a higher velocity than material passed through the heating unit via said first path.

18. (new): An apparatus according to claim 17, wherein the second path is configured to extract material from the still pot at a higher level than the first path.

- 19. (new): An apparatus according to claim 17, wherein the second path is configured to return material to the still pot beneath the surface level of the liquor in the still pot.
- 20. (new): An apparatus according to claim 17, wherein the first path includes a pump between the still pot and the heating unit and a pressure reducing device between the heating unit and the still pot.
- 21. (new): An apparatus according to claim 17, wherein the first path includes a pyrolysis vessel within the heating unit.
- 22. (new): An apparatus according to claim 21, wherein the pyrolysis vessel is configured to thermally crack extracted under pressure to a mixture of lighter molecular weight compounds before injection back into the still pot.
- 23. (new): An apparatus according to claim 16, which is configured to heat a volume of liquid extracted from the still pot to above the cracking temperature while keeping it at sufficiently high pressure to remain in a balanced gas/fluid state before d injection back into the still pot.
- 24. (new): An apparatus according to claim 17, further comprising a storage tank from which feedstock is fed to the heating unit prior to being fed into the still pot.